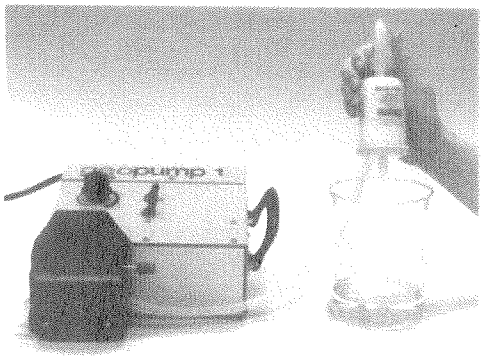
Geopump™ Peristaltic Pumps

The Geotech Series I and II Geopump™ Peristaltic Pumps are designed for single and multi-stage pressure or vacuum pumping of liquids. The Geopump is ideally suited for field sample removal from shallow wells and all surface water sources or laboratory use.

- Exceptional field durability
- Operate from 60 to a maximum of 600 RPM
- Delivery rate of 1.67 ml per revolution
- Operate to a depth of 27 feet at sea level
- Variable speed control
- Reversible flow feature for back-flushing
- Disposable and dedicated tubing means controlled costs and no decontamination issues

Geopump™ Peristaltic Pump Series II with EZ-load 2 pump head (optional), 5 ft tubing, carrying case and power cord



Geopump™ Peristaltic Pump Series I with EZ-load 2 pump head (optional) and dispos-a-filter capsule

Operation

The Geotech Peristaltic Pumps operate by mechanical peristalsis, so the sample only comes in contact with the tubing. This allows for sample integrity as well as easy cleaning and replacement. With the optional stainless steel tubing weight, tubing can be lowered to a specific depth without curling or floating on the surface of the water. Geopumps operate from any external 12 VDC or 120 VAC power source.

SERIES II Geopump™ Peristaltic Pumps are available in AC only, DC only, or an AC/DC combination. They have two pumping stations which can also be piggy-backed for multi-station pumping. The first pumping station has a variable speed of 30 to 300 RPM and the second station 60 to 600 RPM.

SERIES I Geopump™ Peristaltic Pumps are available in AC only, DC only, or an AC/DC combination. These units have one pumping station which can be piggy-backed for multi-station pumping. They have variable speeds ranging from 60 RPM to 350 RPM.

HF Scientific MicroTPI and MicroTPW Portable Turbidity Meters

- **Rugged Portable Carrying Case** - Ensures durability and convenience no matter where your sample happens to be
- **Waterproof** - Waterproof housing allows sample measuring and cleaning in any wet environment
- **Completely Self Contained** - Contains everything you need, including, battery pack, sample cells, manual, and calibration standards
- **Auto Ranging 0 - 1100 NTU** - Senses turbidity and automatically adjusts to the appropriate measurement scale
- **Simple Calibration Procedures**
- **Economical Cost**
- **Over 1000 Tests on a single set of 4 - AAA alkaline batteries**
- **Laboratory Accuracy**
- **Made in the USA**

Designed to provide the ease of portability needed in the field with rugged durability. The MicroTPI and MicroTPW are a "must have" for anyone monitoring turbidity on the go. The shock-resistant carrying case holds everything needed for field operation while the instrument itself removes easily to go wherever you need it. With resolution of 0.01 NTU and an extended range to 1,100 NTU, the MicroTPI and MicroTPW are perfect for field use.

HF SCIENTIFIC MICROTPI & MICROTPW SPECIFICATIONS

Conformance:	ISO 70727, USEPA Method 180.1
Measurement Range:	Auto - Ranging from 0 - 1100 NTU
Principle of Operation:	Nephelometric
Certification:	CE, NEMO 4x, Designed to meet IP67
Accuracy:	
(0-500 NTU)	± 2% of reading or ± 0.01 NTU
(500-1100 NTU)	± 3% of reading
Resolution:	0.01 NTU < 10 NTU 0.1 NTU < 100 NTU 1 NTU < 1100 NTU
Response Time:	6 to 16 seconds
Display:	4 Digit (7 segment) LCD
Light Source:	
(TPI)	IR - LED (860 nm)
(TPW)	White Light (Tungsten lamp compliant)
Power Supply:	4 - AAA Alkaline Batteries (over 1000 Tests)
Sample Cells:	10mL
Materials:	
(Instrument)	ABS - Injection molded
(Carry Case)	High density Polyethylene blow molded
Shipping Dimensions:	11 x 12 x 3 inches (28 x 30.5 x 7.6 cm)
Shipping Weight:	2.7 lbs (1.22 kg)

Thermo Electron Orion AQUAFast AQ4500 Turbidimeter

Thermo Electron introduces the Orion AQ4500 Turbidimeter which offers advanced features not available on any other benchtop or portable turbidimeter. The AQ4500 offers a dual source LED which allows readings that comply with both EPA 180.1 and ISO 7027. Turbidity can be read in the range of 0 - 1000 NTU with a choice of units: NTU, FTU, FNU, ASBC, and EBC. In the range of 0 - 40 NTU the AQ4500 offers a ratiometric range which will give EPA, GLI method 2 equivalent numbers. This portable field unit is truly IP67 waterproof with typical battery life over 1000 hours on one set of batteries and datalog capacity of 100 points which can later be downloaded to a printer or computer. The AQ4500 accepts 24 mm cuvettes and comes with a two year warranty.

Thermo
ELECTRON CORPORATION

- Nephelometric and Ratiometric measurements with Autoranging
- Data log capacity of up to 100 data points
- Readings in the range of 0 - 1000 NTU with a choice of units: NTU, FTU, FNU, ASBC, or EBC
- Includes Turbidity Standards kit, rugged carrying case, and replacement cuvettes
- Orion AQ4500 is truly IP67 waterproof to a depth of 3 meters

ORION AQUAFAST AQ4500 SPECIFICATIONS

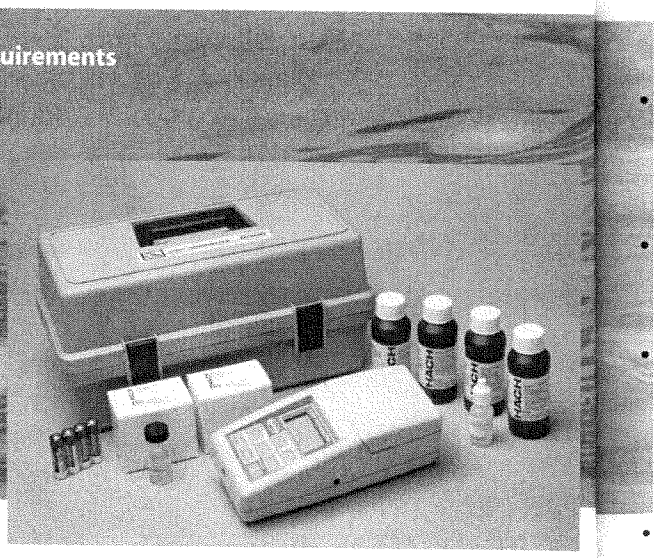
Type	Turbidity Meter
Principle of Operation	Nepeholmetric
Operating Modes	Automatic
Measurement Modes	Automatic
Ranges	
NTU	0–2000
Nephelometric	0–4000
EPA	0–4000 NTU
ISO - NEPH (7027)	0–150 FNU
ISO - ABSB	40–4000 FAU
IR RATIO	0–4000 NTU
EBC	0–24.5
ASBC	0–236
Accuracy	± 2% of reading plus 0.01NTU (0–500 NTU) ± 3% of reading (500–1000 NTU) ± 5% of reading (1000–2000 NTU)
Resolution	0.01 NTU (0–9.99) 0.1 NTU (10–99.9) 1 NTU (100–1000)
Repeatability	± 1% of reading or 0.01 NTU
Response Time	< 8 seconds
Calibration	1, 10, 100, 1000 NTU
Signal Averaging	Yes
Sample Cell Size	24 mm
Sample Size	12 mL
Display	Custom LED
RTC	Yes
Input/Output	RS 232 Serial Port
Power	Battery - four AA's (2,500 hr Alkaline, 10,000 lithium)
Environmental Conditions	
Operating Temperature	-40° to 140°F (-40° to 60°C)
Humidity	90% RH at 30.0C max
Light Source	White, IR
Warranty	2 years
Weight	8 lbs (3.63 kg)
Safety Rating	UL, CSA, CE, FCC

1-800-833-7958 www.geotechenv.com fax 303-322-7242 sales@geotechenv.com

Hach 2100P
Portable Turbidimeter

The Hach 2100P Portable Turbidimeter measures turbidity of water using microprocessor controlled operation and patented ratio optics. It is ideal for regulatory monitoring, process control or field studies.

- **Meets EPA performance requirements**
- **Lightweight, rugged design**
  Weighs less than one pound and comes ready to use.
- **Auto-Range or 3 manual ranges available**
- **Built-in diagnostic mode**
- **Rental units available - *Call Today!***



Calibration and Standardization
Calibration of the 2100P Portable Turbidimeter is based on Formazin, the accepted primary standard for turbidity measurement. For convenient routine verification, Geotech supplies Gelex® Secondary Standards (metal oxide particles locked in gel) formulated to simulate Formazin. When checked periodically against Formazin, these secondary standards are a simple and accurate means of checking instrument calibration.

Built-in Diagnostics
The diagnostic mode is accessible with one key stroke. This mode allows the operator to obtain information about operating parameters that can help evaluate instrument functions.

Electronic Zero
When the READ key is pressed, the 2100P Portable Turbidimeter automatically zeros the instrument, compensating for stray light and electronic and optical offsets. No manual adjustment is required.

Two-Year Warranty
Hach warrants the 2100P Portable Turbidimeter against defective materials or workmanship for two years from the date of purchase.

HACH 2100P PORTABLE TURBIDIMETER SPECIFICATIONS

Ranges	
automatic range mode	0-1000 NTU
manual range	0-9.99 NTU
manual range	0-99.9 NTU
manual range	0-1000 NTU
Accuracy	±2% of reading or ±1 significant digit
Accuracy at 500-1000 NTU	±3% of reading
Repeatability	±1% of reading or ±0.01 NTU, which ever is greater
Resolution	0.01 NTU on lowest range
Stray light	£0.02 NTU
Sample Required	15 mL
Power Requirement	four AA alkaline batteries or optional 120 or 230V AC battery eliminator
Construction	high impact ABS plastic shell
Dimensions	22.0 x 9.5 x 8.9 cm (8.75 x 3.75 x 3.5 inches)
Shipping Weight	3.6 kg (8 lbs.)
Warranty	Two years

ANALYTICAL

YSI 556 MPS
Multi-Probe Field Meter

The YSI 556 MPS simultaneously measures dissolved oxygen, pH, conductivity, temperature, ORP, and more. The YSI 556 combines the versatility of an easy-to-use, easy-to-read handheld unit with all the functionality of a multiparameter system.

- Field replaceable DO, conductivity, and pH/ORP electrode modules.
- Easy-to-use screw-on cap DO membranes.
- 4, 10 and 20 meter cable lengths available.
- Stores over 49,000 data sets, time and date stamped. Easy download to PC.
- Standard soft-sided carrying case with enough space for the YSI 556, 20-meter cable and calibrating supplies.
- Probe guard protects sensors for down-well or open channel readings.

1-800-833-7958 www.geotechenv.com fax 303-322-7242 sales@geotechenv.com

YSI 556 MPS SPECIFICATIONS

Size:	11.9cm width x 22.9 cm length (4.7 in. x 9 in.)
Weight w/ batteries:	2.1lbs
Power:	4 alkaline C-cells; optional rechargeable pack
Cables:	13.1, 32.8 and 65.6 ft. lengths
Warranty:	3 year for the instrument 1 year for the probe module
Options:	Flowcell Hard-sided carry case

YSI 556 SENSOR SPECIFICATIONS

	Sensor type:	Range:	Accuracy:	Resolution:
Dissolved Oxygen (% saturation)	Steady state polarographic	0 to 500% air sat.	0 to 200% air sat.; ±2% of the reading or 2% air sat. whichever is greater; 200 to 500% air sat., ±6% of the reading	0.1% air sat.
Dissolved Oxygen (mg/L)	Steady state polarographic	0 to 50 mg/L	0 to 20mg/L: ± 2% of the reading or 0.2mg/L whichever is greater. 20 to 50 mg/L ±6% of the reading	0.01 mg/L
Temperature	YSI precision Thermistor	-5 to 45°C	±0.15°C	0.1°C
Conductivity	4-electrode cell with autoranging	0 to 100mS/cm	±0.5% of reading +0.002mS/cm	0.001 mS/cm to 0.1 mS/cm (range dependent)
Salinity	Calculated from Cond. and Temp.	0 to 70 ppt	± 1.0% of reading or 0.1ppt whichever is greater	0.01 ppt
pH	Glass combination electrode	0 to 14 units	±0.2 units	0.01 units
ORP	Platinum button	-999 to +999 mV	±20 mV	0.1 mV
Barometer (optional)		500 to 800 mm Hg	±3 mm Hg within ± 15°C temp. range from calibration point	0.1 mm Hg
TDS	Calculated from cond. based on TDS value of calibration solution	User dependent	0.001 g/L	User dependent
Resistivity	Calculated from conductivity reading	Measured in KOhm*cm, user dependent	±0.5% of reading	

YSI 556 MPS with Kit and optional flowcell

Geotech offers technical support as well as annual calibration and cleaning service for all meters!

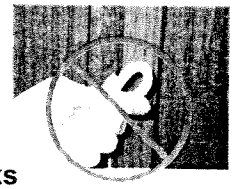
Quick Reference

WL15 Level Logger

Pressure Transducer, Data Logger and Palm Pilot
with customized software for both PalmOS and Windows.
Records Level, Flow, and Pressure at regular intervals.

Basic Setup & Operation:

- Ensure that the cable is handled & stored with large loops and NOT KINKED (which blocks the barometric compensation tube).

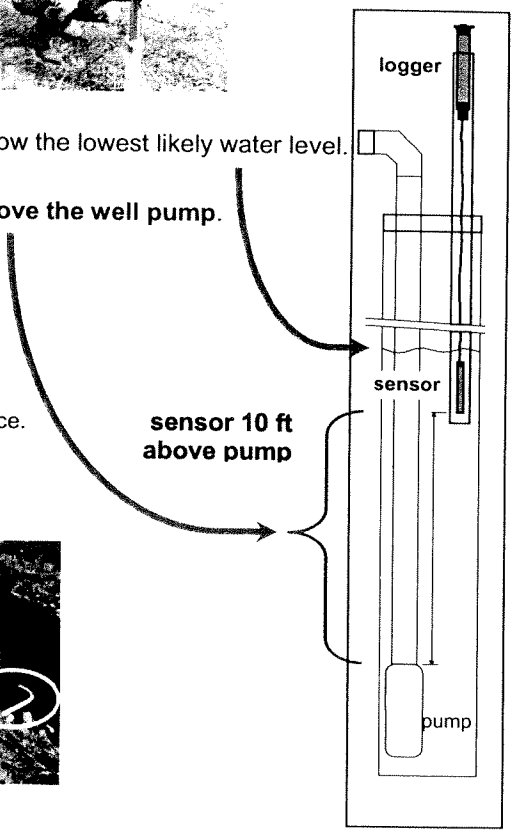


Big Loops, No Kinks

Cable Too Long?
Refer to operations manual or website for tips on how to safely cope with extra cable.

- The Data Logger intentionally fits into 2-inch PVC pipe. If the well casing is larger, simply use a reducer to accomodate a short section of 2-inch pipe to house the Data Logger. A locking, protective metal Well Cap is optionally available.

- It is not necessary to locate the sensor at the well's bottom – merely below the lowest likely water level.
- Avoid error & cable entanglements by installing sensor **at least 10 ft above the well pump**.



A Note on Battery Life:

Although the 9-volt battery in the Logger will last months when in normal use, the connection to computer or Palm to collect readings is highly draining. Limit the length of data collection sessions so that battery life is conserved. We HIGHLY recommend the use of Lithium batteries for their improved performance. Consider your timing of battery changes to maximize Logger performance.

Open-Channel Installations:

- Keep debris, silt or mud away from sensor (eg: Open Channel installations) by housing sensor in **perforated conduit** or wellscreen.

- **Use Long-Sweep Elbows** (PVC conduit fittings) to ease cable deployment through conduit for riverbank monitoring of flow / level in open channels.

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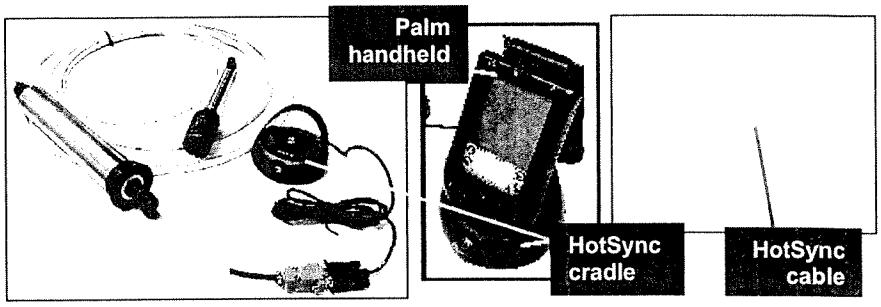
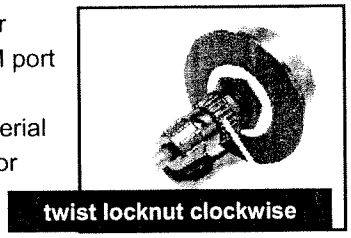
Communications Connections

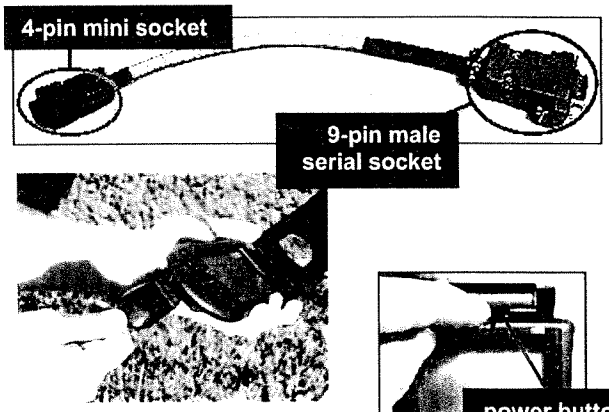
- Note the different cable connections used to enable communications between your Global Level Logger and the Palm handheld. The Palm may be connected to either the HotSync Cradle or Cable, depending on convenience in the office, lab or field. Ensure that each connection is secure.



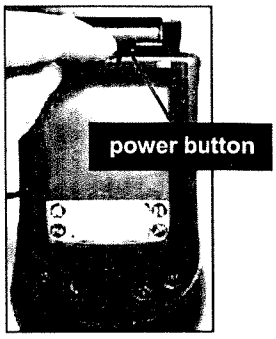
1. Connect short adaptor cable to WL15's COM port

2. Connect 9-pin male serial socket of short adaptor cable to HotSync Cable (or Cradle).



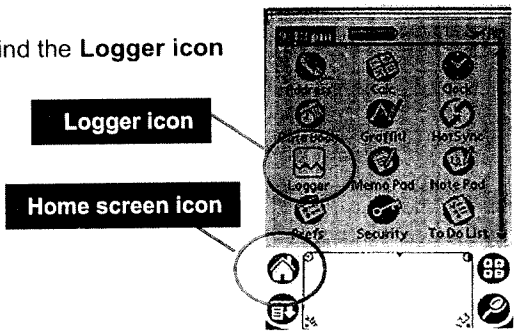


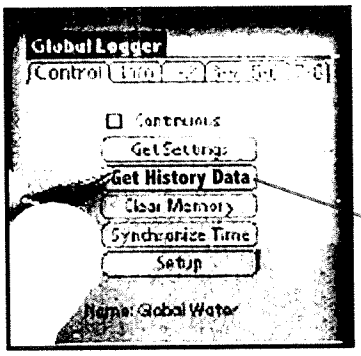
3. Connect HotSync cable to the Palm handheld (or place Palm in its Cradle).



Palm Operation Basics

4. **Turn on power** of Palm handheld and find the **Logger icon** to launch the Global Logger Software (found on Home screen).





5. From the Control Screen, **tap "Get History Data"** to display the accumulated readings. These readings may be saved to a database within the Palm, or kept in the Logger's memory or deleted.
Please see Operator's Manual for more detailed configuration and operating instructions.

Also:

- Overly-frequent archiving of data causes rapid depletion of battery life in the Data Logger.
- If performing a Contiuous Data Check, limit session to ONE MINUTE ONLY. (This data is NOT saved.)
- **If the Palm's battery drains completely (or is not replaced within 15 sec of removal), the Global Logger software (and all data files) will be lost & must be re-installed.**

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